CLAIMS:

1. Power amplifier for amplifying an electric signal in an operational frequency range comprising

- switching means for generating a block wave signal by alternately switching the block wave signal to a first supply voltage or a second supply voltage,
- filter means for generating a power output signal by low pass filtering the block wave signal,
- input means for receiving the electric signal and driving the switching means, and
- a control circuit coupled to the output power signal and the input means for controlling the power amplifier,

characterized in that

the control circuit is connected between the power output signal and a linear input of the input means for controlling both the gain in the operational frequency range and also said alternately switching of the switching means, said linear input being substantially free of hysteresis.

2. Power amplifier as claimed in claim 1, wherein the control circuit only has a voltage feedback from the power output signal.

3. Power amplifier as claimed in claim 2, wherein the control circuit comprises a first element, in particular a resistor, for controlling said gain and a second element, in particular a capacitance in series with a resistor, for controlling said alternately switching.

4. Power amplifier as claimed in claim 1, wherein the filter means comprise a self-inductance and a capacitance.

5. Power amplifier as claimed in claim 1, wherein the switching means comprise a first switching unit for switching to the first supply voltage and a second switching unit for switching to the second supply voltage, and the input means comprise a voltage comparator

having complementary current outputs for respectively driving the first and second switching unit.

6. Power amplifier as claimed in claim 5, wherein the voltage comparator comprises a difference amplifier and a switching current mirror providing said complementary current outputs.

7. Power amplifier as claimed in claim 1, wherein the switching means comprise a first switching unit for switching to the first supply voltage and a second switching unit for switching to the second supply voltage, both switching units being substantially identical.

8. Power amplifier as claimed in claim 7, wherein one of the switching units is floating with respect to said supply voltages, and derives its power from a bootstrap diode power circuit.

9. Power amplifier as claimed in claim 1, wherein the switching means comprise a driver circuit for a MOSFET type power switch, the circuit including active pull-up circuit for discharging a gate of said power switch.

10. Power amplifier circuit for use in a power amplifier as claimed in any of the preceding claims for amplifying an electric signal in an operational frequency range, the circuit comprising

- switching means for generating a block wave signal by alternately switching the signal to a first supply voltage or a second supply voltage,
- input means for receiving the electric signal and driving the switching means,

characterized in that

the input means have a linear input for connecting a controlling circuit for controlling both the gain in the operational frequency range and also said alternately switching of the switching means, said controlling circuit being connected between the linear input and a power output signal generated by low pass filtering the block wave signal, said linear input being substantially free of hysteresis.